

IN THE CLAIMS

A listing of the claims presented in this patent application appears below. This listing replaces all prior versions and listing of claims in this patent application.

Claims 1 – 60 (Cancelled)

[61] (New) A conductive thin film which is formed by mixing at least nanotube comprising at least one of metallic nanotube and semiconductive nanotube and a liquid crystalline organic compound having a charge transport function together and orienting molecules of the liquid crystalline organic compound to cause molecules of the nanotube to be oriented.

[62] (New) The conductive thin film according to claim 61, wherein said nanotube is carbon nanotube.

[63] (New) The conductive thin film according to claim 61, wherein said liquid crystalline organic compound is a liquid crystalline organic compound having at least one of a nematic liquid crystalline phase and a smectic liquid crystalline phase.

[64] (New) The conductive thin film according to claim 61, wherein said liquid crystalline organic compound is a liquid crystalline organic compound having at least l 6 π -electron aromatic rings, m 10 π -electron aromatic rings or n 14 π -electron aromatic rings (wherein l+m+n = 1 to 4; and l and n are each an integer from 0 to 4).

[65] (New) The conductive thin film according to claim 64, wherein said liquid crystalline organic compound is a liquid crystalline organic compound having at least any one of a 2-phenylnaphthalene ring, a biphenyl ring, a benzothiazole ring and a t-thiophene ring and a substantially rod-like molecular structure.

[66] (New) A conductive thin film which is formed by mixing at least a non-liquid-crystalline organic semiconductor compound and a non-liquid-crystalline organic compound to form a liquid crystalline organic semiconductor mixture and orienting molecules of the liquid crystalline organic semiconductor mixture to cause molecules of the organic semiconductor compound to be oriented.

[67] (New) The conductive thin film according to claim 66, wherein said liquid crystalline organic semiconductor mixture is a liquid crystalline organic semiconductor mixture in which said organic semiconductor compound and said organic compound are hydrogen-bonded to each other.

[68] (New) The conductive thin film according to claim 67, wherein one of said organic semiconductor compound and said organic compound is a compound having at least one element selected from nitrogen, oxygen, sulfur and halogen and the element selected is hydrogen-bonded to hydrogen.

[69] (New) The conductive thin film according to claim 68, wherein the one of said organic semiconductor compound and said organic compound which has at least said element selected is a compound further having at least one of an unsaturated bond and a benzene ring.

[70] (New) The conductive thin film according to claim 66, wherein said organic semiconductor compound is a derivative comprising an organic semiconductor compound of at least any one of an acene type, a phthalocyanine type and a thiophene type.

[71] (New) The conductive thin film according to claim 70, wherein the derivative comprising an organic semiconductor compound of said acene type is a pentacene derivative.

[72] (New) The conductive thin film according to claim 70, wherein the derivative comprising an organic semiconductor compound of said phthalocyanine type is a copper phthalocyanine derivative.

[73] (New) The conductive thin film according to claim 66, which is formed by orienting molecules of said organic semiconductor mixture to cause molecules of said liquid crystalline organic semiconductor compound to be oriented and then removing said organic compound from said liquid crystalline organic semiconductor mixture.

[74] (New) The conductive thin film according to claim 73, which is formed by removing said organic compound from said liquid crystalline organic semiconductor mixture by at least one of heating and ultraviolet irradiation.

[75] (New) A conductive thin film, which is formed by mixing at least an organic semiconductor compound having a first liquid crystalline phase in which crystallization temperature allowing crystallization from the liquid crystalline phase to occur is not lower than room temperature and an organic compound exhibiting a second liquid crystalline phase of a lower orientational order than the first liquid crystalline phase within a temperature range that is higher than the crystallization temperature of the organic semiconductor compound so as to contain 70 to 98 wt% of said organic semiconductor compound to form a mixed composition and orienting the mixed composition in the second liquid crystalline phase exhibited within a predetermined temperature range to cause molecules of the organic semiconductor compound to be oriented.

[76] (New) The conductive thin film according to claim 75, wherein said first liquid crystalline phase is a smectic liquid crystalline phase, while said second liquid crystalline phase is a nematic liquid crystalline phase.

[77] (New) The conductive thin film according to claim 75, wherein said organic semiconductor compound is an organic semiconductor compound comprising a low polymer organic semiconductor compound.

[78] (New) The conductive thin film according to claim 75, wherein said mixed composition is a mixed composition containing 90 to 95 wt% of said organic semiconductor compound.

[79] (New) The conductive thin film according to claim 75, wherein said organic semiconductor compound is an organic semiconductor compound comprising an oligothiophene derivative.

[80] (New) A method of fabricating a conductive thin film comprising: mixing at least nanotube comprising at least one of metallic nanotube and semiconductive nanotube and a liquid crystalline organic compound having a charge transport function together; and orienting molecules of the liquid crystalline organic compound to cause molecules of the nanotube to be oriented.

[81] (New) The method according to claim 80, wherein carbon nanotube is used as said nanotube.

[82] (New) The method according to claim 80, wherein a liquid crystalline organic compound having at least one of a nematic liquid crystalline phase and a smectic liquid crystalline phase is used as said liquid crystalline organic compound.

[83] (New) The method according to claim 80, wherein a liquid crystalline organic compound having at least l 6π -electron aromatic rings, m 10π -electron aromatic rings or n 14π -electron aromatic rings (wherein $l+m+n = 1$ to 4 ; and l and n are each an integer from 0 to 4) is used as said liquid crystalline organic compound.

[84] (New) The method according to claim 83, wherein a liquid crystalline organic compound having at least any one of a 2-phenylnaphthalene ring, a biphenyl ring, a benzothiazole ring and a *t*-thiophene ring and a substantially rod-like molecular structure is used as said liquid crystalline organic compound.

[85] (New) A method of fabricating a conductive thin film comprising: mixing at least a non-liquid-crystalline organic semiconductor compound and a non-liquid-crystalline organic compound to form a liquid crystalline organic semiconductor mixture; and orienting molecules of the liquid crystalline organic semiconductor mixture to cause molecules of the organic semiconductor compound to be oriented.

[86] (New) The method according to claim 85, wherein a liquid crystalline organic semiconductor mixture in which said organic semiconductor compound and said organic compound are hydrogen-bonded to each other is used as said liquid crystalline organic semiconductor mixture.

[87] (New) The method according to claim 86, wherein a compound having at least one element selected from nitrogen, oxygen, sulfur and halogen is used as one of said organic semiconductor compound and said organic compound and the element selected is hydrogen-bonded to hydrogen.

[88] (New) The method according to claim 87, wherein a compound further having one of an unsaturated bond and a benzene ring is used as the one of said organic semiconductor compound and said organic compound which has at least said element selected.

[89] (New) The method according to claim 85, wherein a derivative comprising an organic semiconductor compound of at least any one of an acene type, a phthalocyanine type and a thiophene type is used as said organic semiconductor compound.

[90] (New) The method according to claim 89, wherein a pentacene derivative is used as the derivative comprising an organic semiconductor compound of said acene type.

[91] (New) The method according to claim 89, wherein a copper phthalocyanine derivative is used as the derivative comprising an organic semiconductor compound of said phthalocyanine type.

[92] (New) The method according to claim 85, which comprises: orienting molecules of said liquid crystalline organic semiconductor mixture to cause molecules of said organic semiconductor compound to be oriented; and then removing said organic compound from said liquid crystalline organic semiconductor mixture.

[93] (New) The method according to claim 92, which comprises removing said organic compound from said liquid crystalline organic semiconductor mixture by at least one of heating and ultraviolet irradiation.

[94] (New) A method of fabricating a conductive thin film comprising: mixing at least an organic semiconductor compound having a first liquid crystalline phase in which crystallization temperature allowing crystallization from the liquid crystalline phase to occur is not lower than room temperature and an organic compound exhibiting a second liquid crystalline phase of a lower orientational order than the first liquid crystalline phase within a temperature range that is higher than the crystallization temperature of the organic semiconductor compound so as to contain 70 to 98 wt% of said organic semiconductor compound to form a mixed composition; and orienting the mixed composition in the second liquid crystalline phase exhibited within a predetermined temperature range to cause molecules of the organic semiconductor compound to be oriented.

[95] (New) The method according to claim 94, wherein a smectic liquid crystalline phase is used as said first liquid crystalline phase and a nematic liquid crystalline phase is used as said second liquid crystalline phase.

[96] (New) The method according to claim 94, wherein an organic semiconductor compound comprising a low polymer organic semiconductor compound is used as said organic semiconductor compound.

[97] (New) The method according to claim 94, wherein a mixed composition containing 90 to 95 wt% of said organic semiconductor compound is used as said mixed composition.

[98] (New) The method according to claim 94, wherein an organic semiconductor compound comprising an oligothiophene derivative is used as said organic semiconductor compound.

[99] (New) A thin film transistor comprising a conductive thin film as recited in claim 61 as a semiconductor layer forming a channel layer.

[100] (New) A thin film transistor comprising a conductive thin film as recited in claim 66 as a semiconductor layer forming a channel layer.

[101] (New) A thin film transistor comprising a conductive thin film as recited in claim 75 as a semiconductor layer forming a channel layer.

[102] (New) A method of fabricating a thin film transistor, comprising a method of fabricating a conductive thin film as recited in claim 80 as a method of fabricating a conductive thin film serving as a semiconductor layer forming a channel layer.

[103] (New) A method of fabricating a thin film transistor, comprising a method of fabricating a conductive thin film as recited in claim 85 as a method of fabricating a conductive thin film serving as a semiconductor layer forming a channel layer.

[104] (New) A method of fabricating a thin film transistor, comprising a method of fabricating a conductive thin film as recited in claim 94 as a method of fabricating a conductive thin film serving as a semiconductor layer forming a channel layer.

[105] (New) An image display device comprising a conductive thin film as recited in claim 61 as at least one of a conductive layer and a semiconductor layer forming a channel layer of a thin film transistor.

[106] (New) An image display device comprising a conductive thin film as recited in claim 66 as at least one of a conductive layer and a semiconductor layer forming a channel layer of a thin film transistor.

[107] (New) An image display device comprising a conductive thin film as recited in claim 75 as at least one of a conductive layer and a semiconductor layer forming a channel layer of a thin film transistor.

[108] (New) An electronic device comprising a conductive thin film as recited in claim 61 as at least one of a conductive layer and a semiconductor layer forming a channel layer of a thin film transistor.

[109] (New) An electronic device comprising a conductive thin film as recited in claim 66 as at least one of a conductive layer and a semiconductor layer forming a channel layer of a thin film transistor.

[110] (New) An electronic device comprising a conductive thin film as recited in claim 75 as at least one of a conductive layer and a semiconductor layer forming a channel layer of a thin film transistor.